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Experimental study of active vibration control for suppressing impact or moving disturbance-induced vibrations with Polyvinylidene Fluoride and fiber Bragg grating sensors

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The new contributions of the paper to the field are:

1. Experimentally study active vibration control of a smart cantilever beam and corresponding control performances.
2. The smart cantilever beam subjected to impacts or moving mass loadings and robust positive position feedback (PPF) control is implemented to suppress the disturbance-induced vibrations.
3. Employ high sensitive polyvinylidene fluoride (PVDF) and fiber Bragg grating (FBG) sensors to capture dynamic characteristics of the disturbances.
4. Resonant frequencies of the cantilever beam are obtained numerically and experimentally for understanding behaviors of the disturbance-induced vibrations.
5. Experimental work provides suggestions for sensor selections in active vibration control of flexible structures.

ABSTRACT

In this work, we experimentally study active vibration control of a smart cantilever beam

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